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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/672,901

09/29/2000

Yukihiro Komatsu

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8821

22428 7590 06/23/2004

FOLEY AND LARDNER  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

CARTER, AARON W

ART UNIT

PAPER NUMBER

2625

DATE MAILED: 06/23/2004

13

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/672,901

Applicant(s)

KOMATSU, YUKIHIRO

Examiner

Aaron W Carter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 9-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is responsive to papers filed on April 19, 2004.

#### ***Response to Amendment***

2. In response to applicant's amendment received on April 7, 2004, all requested changes to the specification and claims have been entered. Claim 8 has been cancelled.

#### ***Response to Arguments***

3. Applicant's arguments filed April 7, 2004 have been fully considered but they are not persuasive.

Applicants argue Asar does not disclose or fairly suggest a guiding means or step that guides the setting of an image characteristic of the image of the product being inspected corresponding to the desired type of inspection.

Examiner disagrees, in the broadest sense; Asar's teachings meet the limitation of the claim. Asar discloses a guiding means that guides the setting of an image characteristic by tagging the defect and providing a pop-up menu for specifying the characteristics of the defects in the image (column 6, lines 50-60) and Teoh discloses a product being inspected corresponding to the desired type of inspection.

#### ***Claim Rejections - 35 USC § 103***

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 7 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,745,593 to Wahawisan et al. ("Wahawisan") in view of US Patent 6,477,266 to Asar.

As to claims 1 and 13, Wahawisan discloses an image processing apparatus comparing an image of a product with a reference image in accordance with a set process for visually inspecting said product, comprising:

Inspection type inputting means for inputting a desired type of inspection of a plurality of types of inspections (Fig. 8, column 5, lines 46-52); and

Operation guiding means for guiding an operation of setting said process suitable for said desired type of inspection input by said inspection type inputting means (column 6, lines 13-20).

Wahawisan does not disclose expressly a fragment image guiding means or an image characteristic guiding means.

Asar discloses a fragment image guiding means for guiding a setting operation of a fragment image of image of said product to be inspected corresponding to desired type of inspection (column 6, lines 43-50) and an image characteristic guiding means for guiding a setting operation of an image characteristic of said image of said product subjected to inspection

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corresponding to said desired type of inspection (column 6, lines 50-60 and Fig. 17, defect tags correspond to image characteristics).

Wahawisan & Asar are combinable because they are from area of product inspection.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to add the fragment image and image characteristic guiding means to the invention disclosed by Wahawisan.

The suggestion/motivation for doing so would have been that this provides rapid viewing and manipulating of the images (column 6, lines 28-32).

Therefore, it would have been obvious to combine Wahawisan with Asar to obtain the invention as specified in claims 1 and 13.

As to claim 2, the combination of Wahawisan and Asar discloses the image processing apparatus according to claim 1, Wahawisan further discloses that characterized in that the input of said desired type of inspection from said inspection type inputting means is performed by using common inspection names in visual inspection (Fig. 8).

As to claim 3, the combination of Wahawisan and Asar discloses the image processing apparatus according to claim 2, Wahawisan further comprising menu presenting means for presenting a menu of said common inspection names respectively corresponding to said plurality of types of inspections (Fig. 8).

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As to claim 7, the combination of Wahawisan and Asar discloses the image processing apparatus according to claim 2, Wahawisan further discloses that characterized in that said common inspection name is any of presence inspection, conformance inspection, orientation inspection, position inspection, dimension inspection, chip and burr inspection and surface inspection (Fig. 8, e.g. "Burr Check").

As to claim 14, please refer to rejections made to claims 1-3 above.

As to claim 15, please refer to rejection made to claim 7 above.

As to claim 16, the combination of Wahawisan and Asar discloses the image processing apparatus according to claim 14, Wahawisan further discloses comprising a pickup portion for taking an image of said product for outputting to said controlling portion (Abstract, lines 1-6).

6. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wahawisan and Asar as applied to claim 2 above, and further in view of USPN 6,070,155 to Cherrington et al. ("Cherrington").

As to claim 4, the combination of Wahawisan and Asar discloses the image processing apparatus according to claim 2, but neglects to explicitly disclose it discloses further comprising explanation presenting means for presenting as desired an explanation related to said type of inspection corresponding to arbitrary said common inspection name in said menu presented by said menu presenting means. However, Cherrington discloses further comprising explanation presenting means for presenting as desired an explanation related to said type of inspection

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corresponding to arbitrary said common inspection name in said menu presented by said menu presenting means (column 4, lines 23-25 and Fig. 2, column 6, lines 52-57 and column 7, lines 21-24). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to add the menu presenting means, as taught by Cherrington, to the image processing apparatus disclosed by Wahawisan and Asar, providing a system and method for integrated highly automated diagnosis (column 3, lines 20-21).

As to claim 5, the combination of Wahawisan, Asar and Cherrington disclose the image processing apparatus according to claim 4, Cherrington discloses characterized in that said explanation shows a content of said visual inspection of said corresponding type of inspection by using an illustration of a typical product as an object of the visual inspection (column 8, lines 16-29).

As to claim 6, the combination of Wahawisan, Asar and Cherrington disclose the image processing apparatus according to claim 4, Cherrington discloses characterized in that said explanation illustrates an application of said visual inspection of said corresponding type of inspection (column 8, lines 16-29).

7. Claims 1,2 8-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over an article entitled "Real-Time Image Processing Using Transputers" by Teoh et al. ("Teoh") in view of US Patent 6,477,266 to Asar.

As to claims 1 and 13, Teoh discloses an image processing apparatus comparing an image of a product with a reference image in accordance with a set process for visually inspecting said product (page 505, Section 2.2, lines 2-3), comprising:

Inspection type inputting means for inputting a desired type of inspection of a plurality of types of inspections (page 505, Section 1, paragraph 3, lines 6-7 and Section 2.2, wherein the component type corresponds to the inspection type, it is inherent that when the component type is determined that it is input into an inspection type inputting means so that it can be sent to the operation guiding means); and

Operation guiding means for guiding an operation of setting said process suitable for said desired type of inspection input by said inspection type inputting means (page 506, Section 3.1, wherein when the type of inspection is determined and input, the inspection process is guided along according to whether it is an IC, Diode or Resistor).

Wherein said operation guiding means comprises

Fragment image guiding means for guiding a setting operation of a fragment image of image of said product to be inspected corresponding to said desired type of inspection (page 506, Section 2.4)

Teoh does not disclose expressly the image characteristic guiding means.

Asar discloses a image characteristic guiding means for guiding a setting operation of an image characteristic of said image of said product subjected to inspection corresponding to said desired type of inspection (column 6, lines 50-60 and Fig. 17, defect tags correspond to image characteristics), as well as the fragment image guiding means (column 6, lines 43-50).

Teoh & Asar are combinable because they are from area of product inspection.



At the time of the invention, it would have been obvious to a person of ordinary skill in the art to add the image characteristic guiding means to the invention disclosed by Teoh.

The suggestion/motivation for doing so would have been that this provides rapid viewing and manipulating of the images (column 6, lines 28-32).

Therefore, it would have been obvious to combine Teoh with Asar to obtain the invention as specified in claims 1 and 13.

As to claim 2, the combination of Teoh and Asar discloses the image processing apparatus according to claim 1, Teoh further discloses that characterized in that the input of said desired type of inspection from said inspection type inputting means is performed by using common inspection names in visual inspection (page 505, Section 1, paragraph 3, lines 5-7, wherein inspection names corresponds to IC, diode, resistor and capacitor).

As to claim 9, the combination of Teoh and Asar disclose the image processing apparatus according to claim 8, Asar further discloses wherein said fragment image guiding means has window-shape menu presenting means for presenting a menu indicating a plurality of types of window shapes to be possible used for setting said fragment image (column 6, lines 43-50, wherein zoom, pan, and scroll correspond to types of window shapes).

As to claim 10, the combination of Teoh and Asar disclose the image processing apparatus according to claim 8, Asar further discloses wherein said image characteristic guiding

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means has image characteristic menu presenting means for presenting a menu showing a plurality of said image characteristics to be set (Fig. 17).

As to claim 11, the combination of Teoh and Asar disclose the image processing apparatus according to claim 10, Asar further discloses wherein said image characteristic guiding means further has image characteristic explanation presenting means for presenting as desired an explanation related to arbitrary said image characteristic on said menu presented by said image characteristic menu presenting means (Fig. 17, wherein the defect tags are an explanation in themselves).

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teoh and Asar as applied to claim 11 above, and further in view of USPN 6,185,324 to Ishihara et al. ("Ishihara").

As to claim 12, the combination of Teoh and Asar disclose the image processing apparatus according to claim 11, but neglect to explicitly disclose characterized in that said explanation presented by said image characteristic explanation presenting means shows said arbitrary image characteristic by using an illustration. However, Ishihara discloses an explanation presented by said image characteristic explanation presenting means shows said arbitrary image characteristic by using an illustration (Fig. 18 and column 14, lines 14-19). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to add the use of illustration in an explanation of an image characteristic, as taught by Ishihara, to the image processing apparatus of Teoh and Asar, this providing an easy to understand visual explanation of the image characteristics (column 14, lines 18-19).

9. Claim 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wahawisan and Asar as applied to claim 16 above, and further in view of USPN 5,699,447 to Alumot et al. (“Alumot”).

As to claim 17, the combination of Wahawisan and Asar discloses the visual inspection system according to claim 16, but neglects to explicitly disclose wherein characterized in that said reference image is an image of said product taken and output by said pickup portion. However, Alumot discloses the wherein a reference image is an image of said product taken and output by said pickup device (column 2, lines 45-49 and column 21, lines 35-40). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to add use of the reference image, as taught by Alumot, to the image processing system as disclosed by Wahawisan and Asar, this providing an inspection device with a relatively low rate of false alarms (column 1, line 60).

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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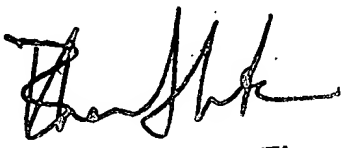
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron W Carter whose telephone number is (703) 306-4060. The examiner can normally be reached on 7am - 3:30 am (Mon. - Fri.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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